

SEP 14 2007

Application No.: 10/820,054

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the Claims:

1 (Currently Amended): An anode electrode for a secondary battery having a cathode and an anode for releasing and receiving ~~the same kind of metal~~ lithium ion therebetween, comprising:

an anode layer formed from a single layer of an anode material, the anode material comprising boron-added amorphous carbon containing at least amorphous carbon and boron, wherein the single layer forming the anode layer has a thickness of 30 μm or less.

2 (Previously Presented): An anode electrode according to claim 1.

wherein the single layer forming the anode layer has a thickness between 1 μm inclusive and 30 μm inclusive.

3 (Currently Amended): An anode electrode according to claim 1,

wherein the boron-added carbon ~~is boron-added amorphous carbon containing at least amorphous carbon and boron, or~~ further comprises boron-added graphite containing at least graphite and boron.

4 (Currently Amended): An anode electrode for a secondary battery having a cathode and an anode for releasing and receiving the ~~same kind of metal~~ lithium ion therebetween, comprising:

an anode layer formed from a single layer of an anode material, the anode material comprising carbonaceous material containing at least amorphous carbon;

wherein the single layer forming the anode layer has a thickness less than 1 μm .

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5 (Currently Amended): An anode electrode according to claim 4,
wherein the carbonaceous material further comprises ~~amorphous carbon or~~ graphite.

6 (Previously Presented): A lithium ion secondary battery, comprising:
an anode electrode according to claim 1;
a cathode electrode including a cathode layer; and
an electrolyte interposed between the cathode electrode and the anode electrode.

7 (Original): A lithium ion secondary battery according to claim 6,
wherein the lithium ion secondary battery has a structure including a plurality of bipolar
electrodes serially stacked by interposing electrolyte therebetween, each bipolar electrode
including a collector having one surface formed with the cathode layer and the other surface
formed with the anode layer.

8 (Original): A lithium ion secondary battery according to claim 6,
wherein the cathode layer includes a cathode active material which is a lithium transition-
metal composite oxide.

9 (Original): A lithium ion secondary battery according to claim 6,
wherein the electrolyte comprises polymer used in a gel form or solid form.

10 (Original): A lithium ion secondary battery according to claim 6,
wherein the lithium ion secondary battery is used in an assembled battery.

11 (Original): A lithium ion secondary battery according to claim 10,
wherein the assembled battery is used for a vehicle.

12 (Previously Presented): A lithium ion secondary battery, comprising:
an anode electrode according to claim 4;
a cathode electrode including a cathode layer; and

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an electrolyte interposed between the cathode electrode and the anode electrode.

13 (Original): A lithium ion secondary battery according to claim 12,

wherein the lithium ion secondary battery has a structure including a plurality of bipolar electrodes serially stacked by interposing electrolyte therebetween, each bipolar electrode including a collector having one surface formed with the cathode layer and the other surface formed with the anode layer.

14 (Original): A lithium ion secondary battery according to claim 12,

wherein the cathode layer includes a cathode active material which is a lithium transition-metal composite oxide.

15 (Original): A lithium ion secondary battery according to claim 12,

wherein the electrolyte comprises polymer used in a gel form or solid form.

16 (Original): A lithium ion secondary battery according to claim 12,

wherein the lithium ion secondary battery is used in an assembled battery.

17 (Original): A lithium ion secondary battery according to claim 16,

wherein the assembled battery is used for a vehicle.

18 (Currently Amended): An anode electrode according to claim 1,

wherein the anode material comprises at least one of oxide[[,]] and sulfide of tin, germanium, indium, lead, silver, and antimony, and salt of ~~other metal which forms an alloy with the metal to be obtained by reducing the metal ion~~ an inorganic or organic acid of tin, germanium, indium, lead, silver, and antimony.

19 (Currently Amended): An anode electrode according to claim 4,

wherein the anode material comprises at least one of oxide[[,]] and sulfide of tin, germanium, indium, lead, silver, and antimony, and salt of ~~other metal which forms an alloy with~~

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~~the metal to be obtained by reducing the metal ion~~ an inorganic or organic acid of tin, germanium, indium, lead, silver, and antimony.

20 (Currently Amended): An anode electrode according to claim 1,
wherein the anode material comprises a supporting salt for enhancing a conductivity of
the ~~metal~~ lithium ion, or a polymer electrolyte.

21 (Currently Amended): An anode electrode according to claim 4,
wherein the anode material comprises any one of a conductive material for enhancing
electron conductivity; a binder; a supporting salt for enhancing a conductivity of the ~~metal~~
lithium ion; and a polymer electrolyte.

22 (Previously Presented): An anode electrode according to claim 1,
wherein a content of boron within the boron-added carbon is within a range from 0.1 to
10% by weight.

23 (Previously Presented): An anode electrode according to claim 1,
wherein the boron-added carbon is formed by baking a carbon material added with a
boron compound.

24 (Previously Presented): An anode electrode according to claim 1,
wherein the boron-added carbon is formed by carbonizing an organic material containing
a boron compound.